Plant Breeders

What They Do

Plant Breeders work with researchers to improve agricultural crops. These improvements will permit plants to be grown in hostile conditions, such as land that is salty, too moist, or in areas that are too hot or too cold. Desirable characteristics such as improved nutritional composition, better resistance to pesticides, or enhanced ability to ward off disease or pests may also be bred into crops. Some plants are even genetically altered to produce drugs and other products that can be used to treat diseases.

Plant breeding is, of course, hundreds of years old; what is new is the ability to make genetic changes more rapidly and in ways that are not possible with traditional breeding techniques.

Plant Breeders help design, develop, carry out, and implement plant breeding research projects working with a research team. Plant breeders may use exotic germ plasm and work with a variety of breeding systems, integrating them with biotechnology as needed to enhance selection methods and speed up product development. They may be responsible for project planning and personnel management.

Plant Breeders plant seeds, water and weed plant beds, plant rooted plants, and nurture root cuttings for future planting. Plant Breeders watch for trends in a plant's growth and signs of disease and record any changes. They monitor the plant's growth, the plant's productivity, and its pest infestations. Once this information is gathered, they enter it into a computer database and help interpret experimental results. This data is then given to Research and Development Scientists for analysis. Plant Breeders sometimes apply pesticides, and may need State certification.

*Plant Breeders in the biotech industry share characteristics of Plant Scientists and Agricultural Technicians. Detailed descriptions of these occupations may be found in the Occupational Information Network (O*NET) at online.onetcenter.org.*

Important skills, knowledge, and abilities include:

- Biology – Knowledge of plant and animal organisms, their tissues, cells, functions, interdependencies, and interactions with each other and the environment.
- Science – Using scientific rules and methods to solve problems.
- Mathematics – Using mathematics to solve problems.
- Oral Comprehension – The ability to listen to and understand information and ideas presented through spoken words and sentences.

Training/Requirements

- Bachelor's degree or equivalent.
- Up to two years of experience in plant breeding and/or agronomics. (See **Additional Sources of Information**.)
- Training in plant breeding or plant science.

EDD Employment Development Department State of California

LMID Labor Market Information Division "Your Information Source"

Plant Breeders

What's the California Job Outlook?

While the Bureau of Labor Statistics does not collect data on Plant Breeders, the occupations listed below are found in the biotechnology industry and have similar duties. The California outlook and wage figures are drawn from all industries and represent occupations comparable to Plant Breeders.

Standard Occupational Classification	Estimated Number of Workers 2000	Estimated Number of Workers 2010	Average Annual Openings	2004 Wage Range (per hour)
Food Scientists and Technologists				
19-1012	1,800*	2,100*	60*	$19.20 to $35.88
Soil and Plant Scientists				
19-1013	1,800*	2,100*	60*	$20.81 to $36.14
Agricultural Technicians				
19-4011	3,000	3,300	90	$10.90 to $18.96

These figures do not include self-employment.

***Average annual openings** include new jobs plus openings due to separations.*

**Projections data is at the broader occupation group level: Agricultural and Food Scientists.*

Source: www.labormarketinfo.edd.ca.gov, Employment Projections by Occupation and OES Employment & Wages by Occupation, Labor Market Information Division, Employment Development Department.

Additional Sources of Information

American Seed Trade Association
(703) 837-8140
www.amseed.com

Occupational Information Network (O*NET)
http://online.onetcenter.org

Biotechnology Careers

Employment Development Department
State of California

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